RAW SEQUENCE LISTING ERROR REPORT

BIOTECHNOLOGY SYSTEMS BRANCH

The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) detected errors when processing the following computer readable form:

Application Serial Number: _09/738,444_

Source: _OIPE_

Date Processed by STIC: _01-08-01_

THE ATTACHED PRINTOUT EXPLAINS DETECTED ERRORS.
PLEASE FORWARD THIS INFORMATION TO THE APPLICANT BY EITHER:
1) **INCLUDING A COPY OF THIS PRINTOUT IN YOUR NEXT COMMUNICATION TO THE APPLICANT, WITH A NOTICE TO COMPLY or,**
2) **TELEPHONING APPLICANT AND FAXING A COPY OF THIS PRINTOUT, WITH A NOTICE TO COMPLY**
FOR CRF SUBMISSION QUESTIONS, PLEASE CONTACT MARK SPENCER, 703-308-4212.

FOR SEQUENCE RULES INTERPRETATION, PLEASE CONTACT ROBERT WAX, 703-308-4216.
PATENTIN 2.1 e-mail help: patin21help@uspto.gov or phone 703-306-4119 (R. Wax)
PATENTIN 3.0 e-mail help: patin30help@uspto.gov or phone 703-306-4119 (R. Wax)

TO REDUCE ERRORED SEQUENCE LISTINGS, PLEASE USE THE CHECKER VERSION 3.0 PROGRAM, ACCESSIBLE THROUGH THE U.S. PATENT AND TRADEMARK OFFICE WEBSITE. SEE BELOW:

Checker Version 3.0

The Checker Version 3.0 application is a state-of the-art Windows based software program employing a logical and intuitive user-interface to check whether a sequence listing is in compliance with format and content rules. Checker Version 3.0 works for sequence listings generated for the original version of 37 CFR §§1.821 – 1.825 effective October 1, 1990 (old rules) and the revised version (new rules) effective July 1, 1998 as well as World Intellectual Property Organization (WIPO) Standard ST.25.
Checker Version 3.0 replaces the previous DOS-based version of Checker, and is Y2K-compliant. Checker allows public users to check sequence listings in Computer Readable form (CRF) before submitting them to the United States Patent and Trademark Office (USPTO).
Use of Checker prior to filing the sequence listing is expected to result in fewer errored sequence listings, thus saving time and money.

Checker Version 3.0 can be down loaded from the USPTO website at the following address:
http://www.uspto.gov/web/offices/pac/checker

Raw Sequence Listing Error Summary

ERROR DETECTED   SUGGESTED   CORRECTION   SERIAL NUMBER: *09/738,444*

ATTN: NEW RULES CASES: PLEASE DISREGARD ENGLISH "ALPHA" HEADERS, WHICH WERE INSERTED BY PTO SOFTWARE

1 _____ Wrapped Nucleics

The number/text at the end of each line "wrapped" down to the next line.
This may occur if your file was retrieved in a word processor after creating it.
Please adjust your right margin to .3, as this will prevent "wrapping".

2 _____ Wrapped Aminos

The amino acid number/text at the end of each line "wrapped" down to the next line.
This may occur if your file was retrieved in a word processor after creating it.
Please adjust your right margin to .3, as this will prevent "wrapping".

3 _____ Incorrect Line Length

The rules require that a line not exceed 72 characters in length. This includes spaces.

4 _____ Misaligned Amino Acid Numbering

The numbering under each 5th amino acid is misaligned. This may be caused by the use of tabs between the numbering. It is recommended to delete any tabs and use spacing between the numbers.

5 _____ Non-ASCII

This file was not saved in ASCII (DOS) text, as required by the Sequence Rules.
Please ensure your subsequent submission is saved in ASCII text so that it can be processed.

6 _____ Variable Length

Sequence(s) _____ contain n's or Xaa's which represented more than one residue.
As per the rules, each n or Xaa can only represent a single residue.
Please present the maximum number of each residue having variable length and indicate in the (ix) feature section that some may be missing.

7 _____ PatentIn ver. 2.0 "bug"

A "bug" in PatentIn version 2.0 has caused the <220>-<223> section to be missing from amino acid sequence(s) _____. Normally, PatentIn would automatically generate this section from the previously coded nucleic acid sequence. Please manually copy the relevant <220>-<223> section to the subsequent amino acid sequence. **This applies primarily to the mandatory <220>-<223> sections for Artificial or Unknown sequences.**

8 _____ Skipped Sequences (OLD RULES)

Sequence(s) _____ missing. If intentional, please use the following format for each skipped sequence:
(2) INFORMATION FOR SEQ ID NO:X:
(i) SEQUENCE CHARACTERISTICS:(Do not insert any headings under "SEQUENCE CHARACTERISTICS")
(xi) SEQUENCE DESCRIPTION:SEQ ID NO:X:
This sequence is intentionally skipped

Please also adjust the "(iii) NUMBER OF SEQUENCES:" response to include the skipped sequence(s).

9 _____ Skipped Sequences (NEW RULES)

Sequence(s) _____ missing. If intentional, please use the following format for each skipped sequence.
<210> sequence id number
<400> sequence id number
000

10 _____ Use of n's or Xaa's (NEW RULES)

Use of n's and/or Xaa's have been detected in the Sequence Listing.
Use of <220> to <223> is MANDATORY if n's or Xaa's are present.
In <220> to <223> section, please explain location of n or **Xaa**, and which residue n or **Xaa** represents.

11 _____ Use of <213>Organism (NEW RULES)

Sequence(s) _____ are missing this mandatory field or its response.

1-14

12 ✓ Use of <220>Feature (NEW RULES)

Sequence(s) _____ are missing the <220>Feature and associated headings.
Use of <220> to <223> is MANDATORY if <213>ORGANISM is "Artificial" or "Unknown"
Please explain source of genetic material in <220> to <223> section.
(See "Federal Register," 6/01/98, Vol. 63, No. 104, pp. 29631-32)   (Sec. 1.823 of new Rules)

13 _____ PatentIn ver. 2.0 "bug"

Please do not use "Copy to Disk" function of PatentIn version 2.0. This causes a corrupted file, resulting in missing mandatory numeric identifiers and responses (as indicated on raw sequence listing). Instead, please use "File Manager" or any other means to copy file to floppy disk.

AKS-Biotechnology Systems Branch- 5/15/99

OIPE

RAW SEQUENCE LISTING   DATE: 01/08/2001
PATENT APPLICATION: US/09/738,444   TIME: 14:19:40

Input Set : A:\Neb-180.app
Output Set: N:\CRF3\01082001\I738444.raw

Does Not Comply
Corrected Diskette Needed
See pp. 1-2

```
      3  <110> APPLICANT: Jack, William E.
      4          Schildkraut, Ira
      5          Menin, Julie F.
      6          Greenough, Lucia
      8  <120> TITLE OF INVENTION: Use of Site-Specific Nicking Endonucleases to Create
      9          Single-Stranded Regions And Applications Thereof
     11  <130> FILE REFERENCE: NEB-180
C-->  13  <140> CURRENT APPLICATION NUMBER: US/09/738,444
C-->  14  <141> CURRENT FILING DATE: 2000-12-15
     16  <160> NUMBER OF SEQ ID NOS: 51
     18  <170> SOFTWARE: PatentIn Ver. 2.0
     20  <210> SEQ ID NO: 1
     21  <211> LENGTH: 40
     22  <212> TYPE: DNA
     23  <213> ORGANISM: Synthetic oligonucleotide
     25  <400> SEQUENCE: 1
     26  aaatcaatct aaagtatata ccggtaaact tggtctgaca              40
     28  <210> SEQ ID NO: 2
     29  <211> LENGTH: 38
     30  <212> TYPE: DNA
     31  <213> ORGANISM: synthetic oligonucleotide
     33  <400> SEQUENCE: 2
     34  ctagcattag tcagactcta cattcaaata tgtatccg                38
     36  <210> SEQ ID NO: 3
     37  <211> LENGTH: 38
     38  <212> TYPE: DNA
     39  <213> ORGANISM: synthetic oligonucleotide
     41  <400> SEQUENCE: 3
     42  gcgctcgatg tcagactcga gcaaaaggcc agcaaaag                38
     44  <210> SEQ ID NO: 4
     45  <211> LENGTH: 56
     46  <212> TYPE: DNA
     47  <213> ORGANISM: synthetic oligonucleotide
     49  <400> SEQUENCE: 4
     50  gagtccgatt gacctaagcg gatactctga cgactcgtag aaaagatcaa aggatc    56
     52  <210> SEQ ID NO: 5
     53  <211> LENGTH: 51
     54  <212> TYPE: DNA
     55  <213> ORGANISM: synthetic oligonucleotide
     57  <400> SEQUENCE: 5
     58  gagtctcaga ctatctggag cgactgactc aaacttggtc tgacagttac c        51
     60  <210> SEQ ID NO: 6
     61  <211> LENGTH: 40
     62  <212> TYPE: DNA
     63  <213> ORGANISM: synthetic oligonucleotide
     65  <400> SEQUENCE: 6
     66  gtaaatatcg gactctacaa tcaaatatgt atccgctcat              40
```

Valid responses for <213>:
- *Genus species*
- *Artificial Sequence*
- *Unknown sequence*

Also missing mandatory <220>,<223> features to explain source of artificial sequences

See #12 on the Error Summary Sheet.

RAW SEQUENCE LISTING   DATE: 01/08/2001
PATENT APPLICATION: US/09/738,444   TIME: 14:19:40

Input Set : A:\Neb-180.app
Output Set: N:\CRF3\01082001\I738444.raw

```
 68 <210> SEQ ID NO: 7
 69 <211> LENGTH: 82
 70 <212> TYPE: DNA
 71 <213> ORGANISM: synthetic oligonucleotide
 73 <400> SEQUENCE: 7
 74 gatcgagtct gacatcgagc gcctagcatt agtcagactc gatatcgagt ctcagcctgt  60
 75 tagcgatggt acatgacgac tc                                          82
 77 <210> SEQ ID NO: 8
 78 <211> LENGTH: 82
 79 <212> TYPE: DNA
 80 <213> ORGANISM: synthetic oligonucleotide
 82 <400> SEQUENCE: 8
 83 ctaggagtcg tcatgtacca tcgctaacag gctgagactc gatatcgagt ctgactaatg  60
 84 ctaggcgctc gatgtcagac tc                                          82
 86 <210> SEQ ID NO: 9
 87 <211> LENGTH: 22
 88 <212> TYPE: DNA
 89 <213> ORGANISM: synthetic oligonucleotide
 91 <400> SEQUENCE: 9
 92 catgtctaga ctgcagagat ct                                          22
 94 <210> SEQ ID NO: 10
 95 <211> LENGTH: 18
 96 <212> TYPE: DNA
 97 <213> ORGANISM: synthetic oligonucleotide
 99 <400> SEQUENCE: 10
100 agatctctgc agtctaga                                               18
102 <210> SEQ ID NO: 11
103 <211> LENGTH: 21
104 <212> TYPE: DNA
105 <213> ORGANISM: synthetic oligonucleotide
107 <400> SEQUENCE: 11
108 tacattcaaa tatgtatccg c                                           21
110 <210> SEQ ID NO: 12
111 <211> LENGTH: 21
112 <212> TYPE: DNA
113 <213> ORGANISM: synthetic oligonucleotide
115 <400> SEQUENCE: 12
116 taaacttggt ctgacagtta c                                           21
118 <210> SEQ ID NO: 13
119 <211> LENGTH: 54
120 <212> TYPE: DNA
121 <213> ORGANISM: synthetic oligonucleotide
123 <400> SEQUENCE: 13
124 gagtatccgc ttaggtcaat cggactcgga ccggatatca catgtgagtc gtca         54
126 <210> SEQ ID NO: 14
127 <211> LENGTH: 54
128 <212> TYPE: DNA
129 <213> ORGANISM: synthetic oligonucleotide
131 <400> SEQUENCE: 14
```

refer to p.1

Error #12

RAW SEQUENCE LISTING   US/09/738,444
PATENT APPLICATION: US/09/738,444

DATE: 01/08/2001
TIME: 14:19:40

Input Set : A:\Neb-180.app
Output Set: N:\CRF3\01082001\1738444.raw

```
132 cctgttagcg atggtacatg acgactcaca tgtgatatcc ggtccgagtc cgat        54
134 <210> SEQ ID NO: 15
135 <211> LENGTH: 10
136 <212> TYPE: DNA
137 <213> ORGANISM: N.BstNBI Recognition Sequence
139 <220> FEATURE:
140 <223> OTHER INFORMATION: N indicates any base (subject to the normal rules
141        of base pairing between the strands).
143 <400> SEQUENCE: 15
144 gagtcnnnnn                                                          10
146 <210> SEQ ID NO: 16
147 <211> LENGTH: 18
148 <212> TYPE: DNA
149 <213> ORGANISM: Artificial Sequence
151 <220> FEATURE:
152 <223> OTHER INFORMATION: Description of Artificial Sequence: Theoretical
153        sequences - all randomly generated
155 <400> SEQUENCE: 16
156 gcgtctaaac ccagatgt                                                 18
158 <210> SEQ ID NO: 17
159 <211> LENGTH: 18
160 <212> TYPE: DNA
161 <213> ORGANISM: Artificial Sequence
163 <220> FEATURE:
164 <223> OTHER INFORMATION: Description of Artificial Sequence: Theoretical
165        sequences - all randomly generated
167 <400> SEQUENCE: 17
168 gcgttcaaac ccagatgt                                                 18
170 <210> SEQ ID NO: 18
171 <211> LENGTH: 18
172 <212> TYPE: DNA
173 <213> ORGANISM: Artificial Sequence
175 <220> FEATURE:
176 <223> OTHER INFORMATION: Description of Artificial Sequence: Theoretical
177        sequences - all randomly generated
179 <400> SEQUENCE: 18
180 agctgttcta agccgcaa                                                 18
182 <210> SEQ ID NO: 19
183 <211> LENGTH: 18
184 <212> TYPE: DNA
185 <213> ORGANISM: Artificial Sequence
187 <220> FEATURE:
188 <223> OTHER INFORMATION: Description of Artificial Sequence: Theoretical
189        sequences - all randomly generated
191 <400> SEQUENCE: 19
192 tgtgaacacc tcgtaacg                                                 18
194 <210> SEQ ID NO: 20
195 <211> LENGTH: 18
196 <212> TYPE: DNA
```

OK

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/738,444

DATE: 01/08/2001
TIME: 14:19:40

Input Set : A:\Neb-180.app
Output Set: N:\CRF3\01082001\I738444.raw

```
197 <213> ORGANISM: Artificial Sequence
199 <220> FEATURE:
200 <223> OTHER INFORMATION: Description of Artificial Sequence: Theoretical
201       sequences - all randomly generated
203 <400> SEQUENCE: 20
204 ttcccaagca catgggat                                            18
206 <210> SEQ ID NO: 21
207 <211> LENGTH: 18
208 <212> TYPE: DNA
209 <213> ORGANISM: Artificial Sequence
211 <220> FEATURE:
212 <223> OTHER INFORMATION: Description of Artificial Sequence: Theoretical
213       sequences - all randomly generated
215 <400> SEQUENCE: 21
216 tctccaagca cagtgagt                                            18
218 <210> SEQ ID NO: 22
219 <211> LENGTH: 18
220 <212> TYPE: DNA
221 <213> ORGANISM: Artificial Sequence
223 <220> FEATURE:
224 <223> OTHER INFORMATION: Description of Artificial Sequence: Theoretical
225       sequences - all randomly generated
227 <400> SEQUENCE: 22
228 tgactcaagc gagtactc                                            18
230 <210> SEQ ID NO: 23
231 <211> LENGTH: 18
232 <212> TYPE: DNA
233 <213> ORGANISM: Artificial Sequence
235 <220> FEATURE:
236 <223> OTHER INFORMATION: Description of Artificial Sequence: Theoretical
237       sequences - all randomly generated
239 <400> SEQUENCE: 23
240 tgactcaagc ggatactc                                            18
242 <210> SEQ ID NO: 24
243 <211> LENGTH: 18
244 <212> TYPE: DNA
245 <213> ORGANISM: Artificial Sequence
247 <220> FEATURE:
248 <223> OTHER INFORMATION: Description of Artificial Sequence: Theoretical
249       sequences - all randomly generated
251 <400> SEQUENCE: 24
252 tgcatcaagc ggatactc                                            18
254 <210> SEQ ID NO: 25
255 <211> LENGTH: 18
256 <212> TYPE: DNA
257 <213> ORGANISM: Artificial Sequence
259 <220> FEATURE:
260 <223> OTHER INFORMATION: Description of Artificial Sequence: Theoretical
261       sequence - randomly generated
```

RAW SEQUENCE LISTING   DATE: 01/08/2001
PATENT APPLICATION: US/09/738,444   TIME: 14:19:40

Input Set : A:\Neb-180.app
Output Set: N:\CRF3\01082001\I738444.raw

```
263 <400> SEQUENCE: 25
264 actgagcgcc atgcatta                                        18
266 <210> SEQ ID NO: 26
267 <211> LENGTH: 18
268 <212> TYPE: DNA
269 <213> ORGANISM: Artificial Sequence
271 <220> FEATURE:
272 <223> OTHER INFORMATION: Description of Artificial Sequence: Theoretical
273       sequence - randomly generated
275 <400> SEQUENCE: 26
276 actgagcgcc agtcatta                                        18
278 <210> SEQ ID NO: 27
279 <211> LENGTH: 18
280 <212> TYPE: DNA
281 <213> ORGANISM: Artificial Sequence
283 <220> FEATURE:
284 <223> OTHER INFORMATION: Description of Artificial Sequence: Theoretical
285       sequence - randomly generated
287 <400> SEQUENCE: 27
288 atcgagcgcc atgcatta                                        18
290 <210> SEQ ID NO: 28
291 <211> LENGTH: 18
292 <212> TYPE: DNA
293 <213> ORGANISM: Artificial Sequence
295 <220> FEATURE:
296 <223> OTHER INFORMATION: Description of Artificial Sequence: Theoretical
297       sequence - randomly generated
299 <400> SEQUENCE: 28
300 atcgagcgcc tagcatta                                        18
302 <210> SEQ ID NO: 29
303 <211> LENGTH: 18
304 <212> TYPE: DNA
305 <213> ORGANISM: Artificial Sequence
307 <220> FEATURE:
308 <223> OTHER INFORMATION: Description of Artificial Sequence: Theoretical
309       sequence - randomly generated
311 <400> SEQUENCE: 29
312 tgtaccatcg ctaacagg                                        18
314 <210> SEQ ID NO: 30
315 <211> LENGTH: 36
316 <212> TYPE: DNA
317 <213> ORGANISM: Artificial Sequence
319 <220> FEATURE:
320 <223> OTHER INFORMATION: Description of Artificial Sequence: Theoretical
321       sequence - implemented via the synthetic
322       oligonucleotide, but never existed as independent
323       entity
325 <400> SEQUENCE: 30
326 gagtctgaca tcgagcgcct agcattagtc agactc                    36
```

VERIFICATION SUMMARY   DATE: 01/08/2001
PATENT APPLICATION: US/09/738,444   TIME: 14:19:41

Input Set : A:\Neb-180.app
Output Set: N:\CRF3\01082001\1738444.raw

L:13 M:270 C: Current Application Number differs, Replaced Application Number
L:14 M:271 C: Current Filing Date differs, Replaced Current Filing Date
L:144 M:258 W: Mandatory Feature missing, <221> not found for SEQ ID#:15
L:144 M:258 W: Mandatory Feature missing, <222> not found for SEQ ID#:15
L:144 M:340 W: (46) "n" or "Xaa" used: Feature required, for SEQ ID#:15